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LUMINARY Memo #100

To: Distribution  
From: C. Schulenberg  
Date: 31 July 1969  
Subject: Brief Summary of Verb, Noun, Alarm, Flagword, and Downlist  
Changes Between LUMINARY 1A and LUMINARY 1B (Rev. 111)

The purpose of this memo is to provide a concise summary in tabular form of all of the changes made in the development of LUMINARY 1B in the areas of concern.

I. Downlist Changes

1. Word 95 of the Rendezvous/Prethrust downlist was changed from DELTAR to a spare. Rev. 102, PCR #844.
2. Word 26 of the Ascent/Descent downlist was changed from a spare to ZDOTD. Rev. 102, PCR #827.

II. Noun Changes

1. Noun 57 was deleted. Rev. 102, PCR #844.
2. Noun 78 was modified as follows:  
R1 = Raw range  
R2 = Raw range-rate  
R3 = Time-from-ignition  
Rev. 106, PCR #780.
3. Noun 46 (R03) was modified so that digit D of register 1 is now to be loaded with a 0, 1, or 2 depending on whether the astronaut desires a deadband of .3, 1, or 5 degrees, respectively.  
Rev. 108, PCR #816.

### III. Verb Changes

1. Verb 57 was extensively altered. Rev. 104, PCR #814.
2. Verb 64 was modified so that it could be used at any time to select R05. Rev. 109, PCR #832.2.
3. The old verb 60 (Command LR to position 2) was changed to be verb 59. A new verb 60 was created which causes LGC computed vehicle rates to be displayed on the FDAI attitude-error needles. Rev. 110, PCR #841.

### IV. Flagword Changes

1. P39/79SW was deleted. Rev. 102, PCR #844 (Formerly bit 9 of flagword 8).
2. P7071FLG was created. Rev. 103, PCR #279 (Now bit 13 of flagword 9).
3. SCALBAD was deleted and a new flagbit, NO511FLG was put in its position. Rev. 108, PCR #839.
4. READLR was deleted and a new flagbit, LPOS2FLG was put in its position. Rev. 108, PCR #839.
5. DBSL2FLG was created. Rev. 108, PCR #816 (Now bit 5 of flagword 13, i.e. DAPBOOLS).
6. AORBSFLG was moved out of its position as bit 5 of flagword 13. Rev. 108, PCR #816 (Now bit 5 of flagword 5).
7. ZOOMFLAG was created. Rev. 109, LNY-90 (Now bit 8 of flagword 5).
8. POOHFLAG was created. Rev. 109, LNY-89 (Now bit 15 of flagword 3).
9. NEED2FLG was created. Rev. 110, PCR #841 (Now bit 15 of flagword 0).

## V. Alarm Changes

As a result of PCR #801.2 the following alarm codes were changed by prefixing with a 2 or a 3 depending on whether the alarm was generated by a POODOO or a BAILOUT respectively: (Rev. 104)

0105	-----	20105
0430	-----	20430
0607	-----	20607
1103	-----	21103
1204	-----	21204
1206	-----	21206
1302	-----	21302
1406	-----	21406
1501	-----	21501

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1104	-----	31104
1204	-----	31201
1202	-----	31202
1203	-----	31203
1207	-----	31207
1210	-----	31210
1211	-----	31211
2000	-----	32000